

CLAIM AMENDMENTS

Please amend the claims as described below. In accordance with 37 CFR §1.121, a complete listing of all claims in the application is provided below. Notably, the status of each claim is indicated in the parenthetical expression adjacent to the claim number.

Claims 1-24 (**canceled**).

1 25. (**new**) A magnetic resonance imaging system for imaging an artery of a
2 patient using an administered magnetic resonance contrast agent, the magnetic resonance
3 imaging system comprising:

4 a monitor unit to allow an operator to observe a change in the concentration of the
5 contrast agent in a region of interest; and

6 a magnetic resonance imaging unit to collect image data of an imaging sequence to
7 image the artery, wherein the magnetic resonance imaging unit, in response to an input
8 from an operator, collects image data which is representative of the central portion of k-
9 space near the beginning of the imaging sequence and a portion of the periphery of k-
10 space thereafter and, wherein the operator provides the input to the magnetic resonance
11 imaging unit after observing a change in the concentration of the contrast agent in the
12 region of interest.

1 26. (**new**) The system of claim 25 wherein the magnetic resonance imaging unit
2 generates a series of images and wherein the monitor unit receives the images and depicts
3 the images as a temporal pattern of the concentration of the contrast agent in the region of
4 interest.

1 27. **(new)** The system of claim 26 wherein the magnetic resonance imaging unit
2 generates a series of magnetic resonance pulses which are applied to the region of interest
3 in the patient.

1 28. **(new)** The system of claim 27 wherein the magnetic resonance pulses are
2 radio frequency pulses .

1 29. **(new)** The system of claim 25 wherein the magnetic resonance imaging unit
2 continuously or periodically generates images of the region of interest and wherein the
3 monitoring unit displays the images of the region of interest.

1 30. **(new)** The system of claim 25 further including a magnetic resonance
2 injection unit to inject the contrast agent into the patient before or while the magnetic
3 resonance imaging unit continuously or periodically generates images of the region of
4 interest that are displayed by the monitoring unit.

1 31. **(new)** A method of imaging an artery of a patient using magnetic resonance
2 imaging and an administered magnetic resonance contrast agent, the method comprising:
3 monitoring a region of interest to observe the arrival of the contrast agent in a region
4 of interest;

5 collecting image data of a magnetic resonance imaging sequence wherein the
6 image data which is representative of the central portion of k-space is collected near the
7 beginning of the imaging sequence and while the concentration of contrast agent in the

8 artery is substantially greater than a concentration of contrast agent in veins adjacent to the
9 artery and wherein the image data which is representative of a peripheral portion of k-
10 space is collected after collecting the central portion of k-space.

1 32. **(new)** The method of claim 31 wherein the imaging sequence is a 3D
2 imaging sequence.

1 33. **(new)** The method of claim 31 wherein monitoring the region of interest
2 includes continuously or periodically monitoring the region of interest to detect the arrival of
3 the contrast agent in the region of interest.

1 34. **(new)** The method of claim 31 further including administering the magnetic
2 resonance contrast agent to the patient as a bolus type injection.

1 35. **(new)** The method of claim 31 wherein monitoring a region of interest to
2 observe the arrival of the contrast agent in a region of interest includes applying a series of
3 magnetic resonance pulses to a region of interest in the patient.

1 36. **(new)** The method of claim 35 wherein the magnetic resonance pulses are
2 radio frequency pulses.

1 37. **(new)** The method of claim 31 further including instructing the patient to hold
2 his breath before collecting image data which is representative of the central portion of k-
3 space.

1 38. **(new)** The method of claim 31 wherein monitoring the region of interest
2 includes visually displaying the region of interest to detect the onset of arterial phase of
3 contrast enhancement in the artery.

1 39. **(new)** The method of claim 31 wherein monitoring the region of interest
2 includes visually displaying the region of interest to detect the arrival of the administered
3 magnetic resonance contrast agent in the artery.